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ABSTRACT

An attempt is made here to trace the development of Coleman's research reports and public statements. Several critical evaluations of this work are then reviewed, including one the authors have carried out. It is suggested the overall research suggests six generalizations: there has been an enormous, long term trend of whites leaving the central cities for the suburbs and blacks coming into the largest central cities. There is little or no effect of desegregation on the white flight of students in medium and smaller sized cities. There is little or no effect of desegregation on the white flight of students in metropolitan wide districts. Desegregation required by federal court orders has not had different effects on white flight from other desegregation of equal magnitude. The loss of white and black students from large urban school systems is significantly related to the proportion of black students in the systems. Extensive school desegregation in the largest, nonmetropolitan school districts, particularly in the South, may hasten the white flight of students in the first year of the process, but at least part of this effect may be compensated for in later years. Finally, attention is given to several basic issues in the conduct of social science research and the reporting of data. (Author/JM)

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PUBLIC SCHOOL DESEGREGATION AND WHITE FLIGHT: A REPLY TO PROFESSOR COLEMAN

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In recent months, the media have accorded much attention to James S. Coleman for his position concerning the relationship between desegregation and "white flight." Coleman has been erroneously described as having changed his position on busing. It is suggested that he has revised his original position of support for busing. The National Observer headline of June 7, 1975 declared "A Scholar Who Inspired It Says Busing Backfired." Lansing, Michigan's State Journal of June 1, 1975 claimed "Court-Ordered Integration Rapped by Sociologist Who Started It All."

Of course, Coleman cannot take the responsibility for having started the busing phenomenon. Indeed he has never claimed such credit.

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Since Coleman is a highly regarded sociologist, his research and his recent and numerous public statements merit both attention and close scrutiny. In what follows, an attempt will be first made to trace the development of Coleman's research reports and his public statements. Several critical evaluations of this work will then be reviewed, including one the present authors have carried out. Finally, attention will be given to several basic issues in the conduct of social science research and the reporting of data.

Coleman's First Paper

The episode began on April 2, 1975 with Coleman's delivery of "Recent Trends in School Integration" by J. S. Coleman, S. Kelly and J. Moore to the American Education Research Association meeting in Washington, D.C. This presentation focused on three major variables that the authors indicated related to "White flight": (1) the natural log of district size; (2) the district's 1970 black proportion; and (3) the increase in school desegregation from 1968 to 1970.

Among the points made in this first paper is Coleman's contention that for the 19 "largest," but unidentified, central city districts both the proportion of black enrollment (variable 2) and the pace of desegregation (variable 3) are positively related to the number of white children leaving the public schools. For the next 50 largest central city districts, however, the results are sharply different. Among these more

typical cities, losses of white pupils are related positively to the district's size (variable 1) and the proportion of black enrollment (variable 2) but not to desegregation (variable 3).

Coleman derives from these findings his two major conclusions that integration does not promote achievement in black children and that the courts should not be an instrument of social policy.

Coleman's Later Interviews

While, as with most academically oriented papers, the mass media gave the paper only minor coverage and comment, Coleman proceeded to grant numerous interviews to reporters. And in contrast to the caution of the initial paper, he was now blunt and far-ranging in his opposition to federal court orders that required extensive urban desegregation. To Muriel Cohen of the Boston Globe (May 18, 1975), he argued that: "A whole generation of young legal talent thinks it can transform the society by winning court cases. That's enormously subversive of the whole political process in the United States." At another point, he added, "I don't know what judges are thinking."

To Bryce Nelson of The Los Angeles Times (May 29, 1975) a few weeks later, Coleman continued his attack. In addition, he told Larry Ingrassia of the Chicago Sun-Times that "when the will for integration does not exist, the imposition of it by the courts doesn't make it successful."

Perhaps the most influential interview appeared in the National Observer (June 7, 1975). After summarizing his research results, he called the courts "the worst of all possible instruments for carrying out a very sensitive activity like integrating schools." Moreover, he contended that the courts were wrong to consider the [Coleman] report in any way. And they were also wrong when they attempted to eliminate all of the racial segregation in a school system. He proposed that the courts constitutionally should limit their actions to undoing the effects of official discrimination. He maintained that a very large proportion of school segregation by race and by social class is due to individual actions with which the courts should not interfere.

Coleman also "speculated" on the social psychological difficulties of big city schools. Desegregation seemed to cause "white flight" in only the largest central city districts, he advanced, due to a much greater feeling of inability to have any impact on the schools, and because the schools cannot maintain order or protect children. He even voiced the opinion that this feeling stems from the failure of big city schools "to control lower class black children."

When pressed for policy recommendations, Coleman advocated activities that encourage racial intermarriage.

All this was big news. Almost at once, newspapers throughout the nation ran "Coleman" stories; and conservative editorialists had a field day. Educational writers on additional newspapers and news magazines began to seek their own interviews with Coleman. Rarely, if ever, has a

sociologist been so sought out by the media for his opinions. While he had earlier been reluctant to deal with the media, soon he granted a dozen or more spearate interviews, many of them by phone.

In July, Coleman flew to troubled Boston and participated in an hour-long question-and-answer commercial television program entitled "Another Look at Busing," on WNAC-TV. He began by admitting that his "very appearance may be mischievous" in Boston, since the court ruling had already been handed down, but he continued to attack the federal courts for moving against the segregation caused by what he saw as "individual action."

The New Analysis and the Second Coleman Report

As the questioning of his initial analysis grew more widespread, Coleman and his colleagues at the Urban Institute undertook a second, more sophisticated, and sharply different analysis in a second, 67-page document dated July 28, 1975 and entitled, "Trends in School Segregation, 1968-73."[1] This second paper was distributed to a small number of social scientists who were invited to attend a one-day discussion with Coleman at the Urban Institute on August 4th.

The new analysis attempted to ascertain the average effect of desegregation upon the loss of white students between each of the six

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1. J. S. Coleman, S. D. Kelly, and J. Moore, "Trends in School Segregation, 1968-73." (Unpublished second version, July 28, 1975) Urban Institute, Washington, D.C. (hereafter referred to as Coleman Two). Note that the hardening of Coleman's political position is reflected in the shift of the title from "school integration" in the first version to "school segregation" in all later versions.

school years from 1968 to 1973. In other words, unlike his initial analysis which looked at white student loss during 1970-73 after desegregation in 1968-70, Coleman now looked for the concurrent effect of desegregation in the same year. Thus, reductions in desegregation in 1968-69 were related to white student losses in 1968-69, and so on for each of the six years across the 69 central cities. Once again the sample was somewhat arbitrarily split into two on the basis of system size.

The results, which were not made available until October, are obtained through use of a set of prediction equations and consist of the regression coefficients together with their standard errors in parentheses and the variance accounted for by the predictors (See Table 1a). In several cases the standard errors are larger than the coefficients implying that many of the variables contribute little to the prediction. The two Equation 1's use only three variables to predict white student loss: annual changes in public school desegregation (ΔR), the proportion of black student enrollment (Prop. black), and the natural log number of total students (ln N). About 20% of the variance in white student changes among the largest cities and about 26% of the variance for the medium-sized cities are explained by these three variables.

The second set of equations do not substantially improve the prediction. They add two more predictors--the degree of inter-district school segregation in the Standard Metropolitan Statistical Area (R SMSA) and the interaction of desegregation with the South (ΔR X SOUTH). About

36% and 35%, respectively, of the variance of annual white student change are accounted for by this array of five predictors.

The interesting and dramatic increase in predictive power for the largest cities occurs in Equation 3. Here three more predictors have been inserted: a dummy (dichotomous) variable for the South and the interactions of change in desegregation with both inter-district metropolitan segregation (ΔR X R SMSA) and the black proportion of students (ΔR X PROP. BLACK). Now 60% of the variance is explained by this eight-variable prediction. But this improvement is largely a function of the interaction between annual desegregation changes in a school system and the system's proportion of black pupil enrollment.

The predictive power of this interaction suggests that so-called "white flight" is not so much a function of desegregation per se as it is of the conditional relationship between desegregation in particular situations related to the percentage of black children in a large central city's public schools.

Coleman next attempted to determine if the loss of whites he attributes to desegregation was largely confined to the first year of the process or continued on into later years. Though his results on this point are erratic, he concluded that the presumed effect of desegregation was concentrated in the first year. Then, in partial answer to his critics who had stressed additional variables related to so-called "white flight," Coleman tried to hold constant factors unique to each city by introducing into the regression equations a dummy (dichotomous) variable

for each city. This effort at statistical control only slightly reduced the Equation 1 coefficient for desegregation in predicting changes in the total number of white pupils in the large cities (from +.277 to +.258); but it does not remove the need for more independent variables.[2]

Finally, Coleman carried out what he reported as a full analysis of covariance that considered not only the rate of desegregation and dummy variables for each city but also the statistical interactions between them (See Table 1b). While of the large cities used in his analysis only eight actually had substantial desegregation, the public furor was supposedly based on these analyses. Two of the estimates involve actual gains in white students; four others have only modest estimated losses in white students (from 2.6% to 7.9%): the only estimates approaching a "massive" loss--as often cited in the press--involve Memphis and Atlanta. Note, too, that the average estimated loss for the eight cities is only 5.2%. And without Memphis and Atlanta, the average is only 1.5%. Again we see what a crucial role just two atypical southern cities play in Coleman's public argument against court-ordered urban school desegregation throughout the United States. His own conclusion was less specific: "They show that the estimated white loss does vary considerably from city to city, and that the average loss rate specified earlier obscures very

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2. The use by Coleman of dummy variables for each city is ingenious, but it includes unmeasured variables only if they are constant over the entire period. Many of the additional variables that have been suggested probably do not possess such consistency.

different loss rates in different cities."[3] Unfortunately, Coleman has consistently failed to make this point forcefully in his Boston television appearance, his court affidavits, and his many public interviews.

The Urban Institute Meeting Response[4]

The Urban Institute called a meeting at its offices in Washington on August 4th to review in detail this second draft. Coleman, his co-author Sarah Kelly, and the president of the Institute, William Gorham, chaired the one-day session. The attendees included Tom Pettigrew. The criticisms and reservations concerning the second paper expressed by the review panel centered on three domains: (1) the political context of the study; (2) the demographic context of the study; and (3) methodological issues.

The political context. Coleman opened the meeting by asking the group to limit comments to the research paper under discussion rather than to his opinions on the subject that had attracted so much public attention. This request was politely rejected by many present on two grounds. First, his opinions had been advanced in the mass media as if they derived directly from this research. Second, both the design and the interpretation of the study were heavily influenced by its

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3. Coleman Two, p. 62; J.S. Coleman, S.D. Kelly, and J. Moore, "Trends in School Segregation, 1968-73." (Unpublished paper, August 15, 1975) Urban Institute, Washington, D.C., p. 62 (hereafter referred to as Coleman Three); and J.S. Coleman, S.D. Kelly, and J. Moore, Trends in School Segregation, 1968-73 (fourth version). Washington, D.C.: Urban Institute, August 1975; pp. 71-72 (hereafter referred to as Coleman Four).

4. A partial, edited transcript of this meeting is available from the Urban Institute (2100 M Street, N.W., Washington, D.C., 20037).

author's opinions. Separation of the research from Coleman's much-publicized opinions was clearly unrealistic.

There was general agreement that the research did not involve many of the subjects that the public thought it involved. Hence, the research was not about achievement, classroom disruptions and the behavior of poor black children--all subjects about which Coleman had expressed opinions in his interviews. It was not even about "busing" and court orders. In fact, it was not strictly speaking even about "white flight," a label that prejudges the cause of the phenomenon. Rather it concerned changes in white student enrollment in urban public school systems as a function of school desegregation achieved by any means.

Even the design of the study reflected its political context. It had been set up to test the narrow question of whether the racial desegregation of urban schools leads to a greater loss of white students. If one set out to formulate a complex causal model of changes in white student enrollment, one would proceed quite differently, ask far broader questions, and utilize a greater variety of predictor variables.

The demographic context. Precisely because the study had been designed and interpreted so narrowly, the broader demographic context of the problem was virtually ignored. The problem was being viewed by Coleman, noted one demographer, in a "vacuum." The growing concentration of whites in the suburbs and blacks in the central cities has been a

massive phenomenon over the past three decades. Without a trend extending back before 1968 in which to view this residential segregation of the races within the nation's metropolitan areas, any study that considers only the 1968 to 1973 period will necessarily be myopic and misleading.

As it stands, the study pays little attention to possible annexations of white suburbs into central cities, confounds race with social class, ignores differences across cities in residential segregation patterns, and does not allow for differential birth rates by race. White student totals declined during this period partly as a function of the rapidly falling white birth rate in the 1960s, the failure of whites to move into the central city in typical numbers, the changing white age structure, and the rise in non-educational urban problems that drove both white and black families out of the city.

Further, Coleman assumes that any loss of white students beyond the "expected" number in the year of desegregation was necessarily "white flight"--white families with school-age children fleeing interracial schools for white private and suburban schools. But this assumption is only inferred from aggregate data; not one white family was actually asked about its motivations. There is a great danger, then, of committing a classic ecological fallacy--incorrectly inferring individual motives from only aggregate data.[5] This problem is heightened by the fact that Coleman bases his entire policy argument upon

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5. See the discussion of the ecological fallacy by W.S. Robinson, H. Menzel, and H. C. Selvin reprinted in: S.M. Lipset and N.J. Smelser (editors), Sociology: The Progress of a Decade. Englewood Cliffs, N.J.: Prentice-Hall, 1961; pp. 132-152.

"individual action," yet he did not measure these actions directly. Enrollment data from individual schools within systems would have narrowed this problem, but such data are not readily available.

Methodological issues. The review panel criticized strongly the use of average "effects" derived from the regression equations. And numerous panel members expressed reservations about presenting any effect estimates when: (1) a third of the standard errors were larger than their coefficients; and (2) many of the variables are predicting very little. A misspecified model is particularly dangerous to use for predicted "effects." Yet these questionable average "effect" estimates were widely cited in interviews and discussions of Coleman's position.

The panel also focused upon the dependent variable. White pupil changes in enrollment, after all, constitute a single net indicator of gains as well as losses. The inability to decompose it into its many constituent parts severely limits the interpretation of the findings. Moreover, the causal sequence inferred from the correlation between desegregation and white enrollment shifts, the panel noted, may often be wrong. In Detroit, Birmingham (Alabama), Atlanta, and Memphis, a large reduction in white students occurred first and was then followed by desegregation. For example, Atlanta's major school desegregation effort did not occur until 1972-73, but its public school system had reached 62% black enrollment four years earlier.

Mention of Atlanta and Memphis raises again the recurrent theme of the critical importance in Coleman's results of these two

special cases. In most of his interviews, Coleman cited both of these cities to support his position against court-ordered desegregation in central cities. But these cities are extreme cases and disproportionately contribute to his findings. Recall that his results are strongest for large cities in the South. It was suggested that if this study were to be taken as a guideline to future national policy then the presumed effects of urban desegregation should be demonstrated for the sub-set of large central cities with Atlanta and Memphis removed from the analysis.

Perhaps the most serious question raised by the review panel concerned the failure of earlier research to uncover Coleman's key result linking reductions in school segregation with reductions in the numbers of white pupils. Jane Mercer and Terrence Scout of the University of California at Riverside, for instance, had earlier shown no demographic differences between 23 desegregating school districts and 67 non-desegregating California districts.[6]

More perplexing than the Mercer-Scout failure to replicate Coleman's basic finding on a set of districts limited to California are the similarly negative results reported by Reynolds Farley using national data from the same source as used by Coleman.[7] Farley failed to un-

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6. J.R. Mercer and T.M. Scout, "The relationship between school desegregation and changes in the racial composition of California school districts, 1963-73." (Unpublished paper) Sociology Department, University of California, Riverside, 1974; p. 28.

7. R. Farley, "Racial Integration in the public schools, 1967 to 1972: Assessing the effects of governmental policies," Sociological Focus, January 1975, 8 (1), 3-26; and R. Farley, "School integration and white flight." (Unpublished paper) University of Michigan, Ann Arbor, Michigan, July 1975 (delivered at the Symposium on School Desegregation and White Flight held at the Brookings Institution, Washington, DC, August 15, 1975.

cover a significant relationship between the two variables in cities of either the South or the North.

Farley's research, however, differed from that of Coleman's in five ways. (1) Farley used a larger sample of cities, 50 in the South and 75 in the North. Rather than limiting his sample, he considered all cities with a 1970 population of 100,000 or more and at least three percent of their public school enrollments black. He also ran analyses with just the 20 largest cities of each region. (2) Farley investigated the 1967 to 1972 period rather than Coleman's 1968 to 1973. (3) Rather than relate annual changes in the variables to each other, as in Coleman's second analysis, Farley related the variables across the entire five-year span. (4) Farley employed only elementary school data, while Coleman employed data from all grades. This difference, however, should have been unimportant, since Coleman showed no differences across the grades. (5) Farley used a dissimilarity index for his measure of school segregation, which differs from the index used by Coleman. These two indices both measure whether black and white students attend the same schools and are independent of the school districts' racial compositions. For a sample of 2,400 school districts, it has been shown that the two indices are correlated at +.88.[8]

Farley was unable to show for either his extensive urban samples or for his sub-samples of the largest cities any systematic relationship between white loss and school desegregation. He concluded:

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8. Barbara Zolotch, "An investigation of alternative measures of school segregation," Institute for Research on Poverty Discussion Papers, University of Wisconsin, Madison, Wisconsin, 1974.

> To be sure when public schools are desegregated or when they become predominantly black, some white parents--perhaps many--hasten their move away from the central city. However, whites are moving out of central cities for many other reasons. We have shown that cities whose schools were integrated between 1967 and 1972 did not lose white students at a higher rate than cities whose schools remained segregated.[9]

Why should the two studies with comparable data reach opposite conclusions?

Farley offered two possible explanations for the diverse results. The one-year effect that Coleman uncovered may well represent only a hastening of some whites to leave the central city who were about to do so in any event. Once a longer span of years is viewed, as in Farley's analysis, this "hastening" effect disappears. Farley's second suggested answer involves again the special role played by Atlanta and Memphis in Coleman's more limited sample.

The Interviews Continue

The media continued to devote attention to Coleman's views throughout August and September. The New York Times Magazine of August 24th printed yet another interview entitled "INTEGRATION, YES: BUSING NO," in which Coleman repeated his now-familiar arguments including his "entitlement" idea for central-city children to choose any school in their metropolitan area. Intermeshed with his discussion of his research were renewed attacks upon "busing."

Coleman did, however, introduce two new pieces of data into his argument, both of which are questionable. He stated flatly that: "Sur-

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9. Farley (July 1975), op. cit., p. 10.

veys indicate that a majority of blacks as well as whites oppose busing." This conflicts with the results of a November 1974 Gallup survey, which established that 75% of "non-white" respondents in a national sample favored "busing school children to achieve better racial balance in schools."[10] He also presented his big-city data for the first time in an unconventional fashion to indicate that desegregation causes additional "white flight":

> Eleven cities out of the first 19 experienced little or no desegregation at all between 1968 and 1973. Based on the white loss that occurred in these 11 cities in 1968-69, they would have been expected to lose 15 percent of white students between 1969 and 1973; their actual loss was 18 percent, only slightly greater than expected. Eight cities experienced some desegregation; some of those experienced large desegregation, others not so large. Those eight cities, based on their losses in 1968-69, before desegregation occurred, would have been expected to lose only 7 percent of white students between 1969 and 1973; they actually lost 26 percent, nearly four times what would have been expected.

This misleading statement actually refers to a third analysis, completely different from the two previously described. It makes no use whatsoever of the earlier regressions and appeared for the first time in the fourth version of Coleman's ever-changing study.[11] But Coleman continued to dwell on this new analysis almost exclusively in his second Boston court affidavit and later public statements. Consequently, we shall later have to take a close look at this third analysis.

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10. Gallup Opinion Index Report 113. Princeton, N.J.: The American Institute of Public Opinion, November 1974.

11. Coleman Four, pp. 69-70.

Many leading newspapers now began to run more critical "Coleman" stories. Reservations about Coleman's research were now expressed, and questions raised as to the validity of his often-quoted opinions. William Grant, the Detroit Free Press education writer (August 19, 1975), contrasted the sociologist's cautious style when in academic settings with his free-wheeling style when talking with reporters. Grant emphasized how many of Coleman's views went "well beyond" his research and how few desegregated cities were actually involved in the study. John Matthews, a Washington Star staff writer (September 4, 1975), provided a detailed description of the study under the banner, IS COURT-ORDERED DESEGREGATION SELF-DEFEATING? Unlike early stories, Mathews took pains to describe the many cities, such as Fort Lauderdale, Tampa, and Charlotte, where Coleman's predictions of massive "white flight" in the face of large-scale educational desegregation had not proven true. He also cited Farley's conflicting research at length. Likewise, Steve Twomey, the education writer for The Philadelphia Inquirer, wrote an extensive article that considered both Coleman's position and that of his critics. Twomey stressed Coleman's novel metropolitan "entitlement" strategy. He also quoted Coleman's description of his critics: "There are a lot of old people who would rather pursue a common path and attempt to ignore the fact that this [desegregation] may be having unintended and undesired consequences."[12]

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12. We question the phrase "a lot of old people." Most of his social science critics (e.g., Farley, Gary Orfield, Christine Rossell, even the writers) are younger than Coleman himself. In addition, surveys of the racial beliefs of white Americans consistently show that Coleman's opinions are most shared among older respondents, most opposed among younger respondents.

Coleman continued these unfortunate ad hominem attacks upon his critics in his second participation in the Boston school desegregation case. On August 27, 1975, while attending the annual convention of the American Sociological Association in San Francisco, he provided an affidavit for the pro-segregationist Boston Home and School Association. He predicted that "full-scale desegregation in Boston, occurring this fall, will have substantial effects in bringing about an additional loss of whites." And he closed his affidavit with a personally-directed blast at the present authors:

> I cannot conclude without mentioning what seems to me an unfortunate phenomenon in social science. On certain questions, there appears to be a kind of conspiracy of silence, and then a rush to the attack when anyone dares to break the silence. I have the impression that if Professors Green and Pettigrew saw the fires in the sky during the riots of 1967, they would have attributed them to an extraordinary display of the Northern Lights. I believe that it does no one any good in the long run for us to blind ourselves to reality, not our fond hopes about it, which measures the effectiveness of government actions.[13]

Critical Review Continues

August and September witnessed further review of Coleman's work by social scientists and lawyers. A one-day "Symposium on School Desegregation and White Flight" was held on August 15, 1975 at the Brookings Institute in Washington, D.C. It was co-sponsored by the Center for National Policy Review of the Catholic University Law School and the Center for Civil Rights of Notre Dame University.

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13. Reply Affidavit of James S. Coleman, Morgan et al. v. Kerrigan et al., United States Court of Appeals for the First Circuit, August 28, 1975, pp. 1-2.

Coleman produced for the occasion yet another draft of his paper. While its preface thanked and listed by name the members of the earlier review panel, this third version was essentially the same as the second draft and reflected little response to the panel's many criticisms. But the final paragraph avoided the loaded term "white flight" and revealed a slightly less dogmatic interpretation that the loss of whites

> . . . is intensified by extensive school desegregation in those central cities, but in cities with high proportion of blacks and predominantly white suburbs, it proceeds at a relatively rapid rate with or without desegregation.[14]

The basic thrust of this conclusion would be agreed to by virtually all specialists in the field. Indeed, the metropolitan character of the problem has been obvious to many for several decades, which is why legal cases seeking metropolitan relief for school segregation have been in the courts for almost a dozen cities. What is at issue is whether court-ordered desegregation entirely within central cities significantly hastens the development of two racially separate Americas--black central cities and white suburbs. This question is far different, and certainly has less policy relevance, than the simple "busing backfires" argument that Coleman's numerous press interviews had led the nation to focus upon.

A recent critical review of Coleman's latest revision carried out by Joseph M. Wisenbaker of Michigan State University points to a number of potentially important flaws in the methodology employed by Coleman in his attempt to analyze the relationship between desegregation and the

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14. Coleman Three, pp. 68-69. This conclusion was retained in the fourth version (Coleman Four, pp. 79-80).

decline in the proportion of white students. In his review Wisenbaker examined a number of points ranging from a very crucial criticism of Coleman's unit of analysis all the way to specific averaging techniques used on the regression coefficients themselves. For example, Coleman's use of dummy variables is a rather ineffective attempt to control for differences among cities unrelated to those of school attendance. For them to be effective in this regard, Wisenbaker points out that all other variables must be assumed to be constant over the six-year period--a very stringent and likely unjustifiable assumption. Indeed, his conclusion based on the methodological shortcomings he sees in Coleman's analyses questions the very usefulness of Coleman's results from the standpoint of anyone trying to understand the relationship between desegregation and "white flight."[15]

If even Coleman's continued analyses reveal increasingly smaller effects, it is hardly surprising that other investigators at the symposium reported results that contrast markedly with the much-heralded fears of "white flight" caused by desegregation. For example, Michael Giles, of Florida Atlantic University, reported on his detailed desegregation research

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15. For a full description of this analysis, see "A Critique of 'Trends in School Segregation, 1968-73'," by Joseph M. Wisenbaker, College of Urban Development, Michigan State University.

in seven diverse school districts in Florida.[16] Since these districts were all county-wide, residential relocation was impractical and private schools offered the only mechanism of "white flight." He reported that the avoidance of desegregation among whites under these conditions was unrelated to racial prejudice or to "busing," was greatest among upper-status families, and was least for schools with less than 30% black student bodies. He recommended metropolitan solutions to problems of urban educational desegregation.

Luther Munford, of the Law School of the University of Virginia, presented the results from his study of 30 school districts in Mississippi undergoing extensive school desegregation from 1968 to 1970. He attacked the notion of an inevitable "tipping point," and demonstrated that, for his sample, "white flight" was explained by "the black/white ratio in the population as a whole rather than just the ratio in the schools."[17] The black population proportion explained 88% of the district variance in the loss of white enrollment across the 30 districts; and three-fourths of even the majority-black schools in these districts actually increased or maintained their white student percentage between Spring and Fall of 1970 after the segregationist resistance had subsided.

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16. M.W. Giles, E.F. Cataldo, and D.S. Gatlin, "Desegregation and the Private School Alternative." (Unpublished paper) Florida Atlantic University, Boca Raton, Florida (delivered at the Symposium on School Desegregation and White Flight held at the Brookings Institution, Washington, D.C., August 15, 1975). See also: E.F. Cataldo, M.W. Giles, D.S. Gatlin, and D. Athos, "Desegregation and White Flight," Integrated Education, January-February 1975. 13, pp. 3-5.

17. Luther Munford, "Schools that quit 'tipping' in Mississippi." (Unpublished paper delivered at the Symposium on School Desegregation and White Flight held at the Brookings Institution, Washington, D.C., August 15, 1975), p. 7. See also: Luther Munford, "White flight from desegregation in Mississippi," Integrated Education, May-June 1973, 11.

Another paper, by Gary Orfield, a political scientist at Brookings, provided the symposium with a political analysis of "white flight research." "Too often," he warned, "selective, half-digested reports of preliminary research findings are disseminated by the media and become weapons in the intense political and legal battle being fought in major cities."[18] He emphasized the complexities involved in sorting out the various forces working toward accelerated suburbanization. "It is impossible now," he concluded, "to demonstrate that school integration, in itself, causes substantial white flight."[19] Orfield described the severe long-term problem of "flight" from the central city as not caused by desegregation but as often undermining the viability of the process. The inner suburbs will soon face the same demographic trend. The problem, then, does not simply translate into the need for housing integration. Indeed, he argues, "It is hard to imagine how stable housing integration, involving large numbers of blacks, could be achieved in any reasonable period of time without a framework of area-wide integrated schools."[20] His conclusion echoes a widespread consensus among race relations specialists:

> There is no evidence that stopping school desegregation would stabilize central city racial patterns. If those patterns are to be significantly modified, positive, coordinated, and often metropolitan-wide desegregation efforts will probably be required.[21]

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18. Gary Orfield, "White flight research: Its importance, perplexities, and possible policy implications." (Unpublished paper) Brookings Institution, Washington, D.C., August 1975 (delivered at the Symposium on School Desegregation and White Flight held at the Brookings Institution, Washington, D.C., August 15, 1975), p. 1.

19. Ibid., p. 2.

20. Ibid., p. 16.

21. Ibid., p. 21.

Christine Rossell, a political scientist at Boston University and a former student of Coleman's at Johns-Hopkins University, took issue with Coleman at the annual meeting of the American Political Science Association in San Francisco.[22] Rossell's paper provided evidence that conflicted with both Coleman's opinions about the political process surrounding desegregation as well as his findings about "white flight."

In part, Rossell directed her analyses to the question of "white flight." She, like Farley and Coleman, made use of the school desegregation data gathered by the Office of Civil Rights of the U. S. Department of Health, Education and Welfare. But she went further by collecting directly from each district whenever possible data prior to 1967 and specific information behind its desegregation process. All told, Rossell assembled data on 86 northern and western districts; 26 had no desegregation, while 60 had had varying degrees of desegregation but only 11 of these were actually under court orders (See Table 1c). This closer look at the process allows Rossell to develop a detailed slope analysis of the pre- and post-desegregation experience of each district. Like Coleman, she also checked directly on racial enrollments in the same year as major desegregation took place in the district.

Rossell's data is summarized under five categories of districts: cities with court-ordered desegregation; those that reassigned over 20% of their pupils for desegregation (High Desegregation); those that reassigned between 5 and 20% (Medium Desegregation); those that reassigned

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22. Christine H. Rossell, "The Political and social impact of school desegregation policy: A preliminary report." (Unpublished paper presented at the annual meeting of the American Political Science Association, September 4, 1975) San Francisco, CA; C.H. Rossell, "The effect of school desegretation on white flight," Political Science Quarterly, Winter 1975, 92, in press.

less than 5% (Low Desegregation); and, finally the control group that reassigned no children whatsoever for desegregation. There are no significant differences among any of these five classes of districts between the pre- and post-desegregation years in the declining white student percentages. The failure for the court-ordered districts to reveal any special trend is especially noteworthy in light of Coleman's repeated attacks upon the federal judiciary and the alleged unintended "white flight" consequences of their far-reaching orders. Recall that Coleman, himself, has never checked specifically on those urban districts that were under court orders.

Using an entirely different methodology from that of Farley, then, Rossell reaches the same negative conclusion. In her extensive sample of northern urban districts, there is no relationship between desegregation and "white flight." And, as with Farley's results, the question arises: Why do Rossell and Coleman reach such different conclusions? Again we must consider the differences in their approaches and data.

Though both investigators based their work on the H.E.W. data, Rossell expanded her data base considerably. In addition to H.E.W.'s 1968-1972 data, she utilized the agency's 1967 data which Coleman inexplicably ignored. She also obtained as much information as is available from before 1967. This expansion of her data base further back into the 1960s allowed Rossell to develop more accurate and reliable pre-desegregation racial enrollment trends. Coleman, we noted earlier, in his third analysis based his calculations on the single base year of 1968.

But the most fundamental differences between the Rossell and Coleman studies are their contrasting operational definitions of the two key concepts--"white flight" and "desegregation." Coleman defines "white flight" as the percentage change in the absolute number of white students. This definition meets some popular ideas about the phenomenon; but it ignores the relative proportion of whites and the simultaneous trend in the absolute number of black students. Changes in the number of white and black students are significantly and positively associated across urban school districts, and black enrollments in some central city systems are beginning to decline. Consequently, Rossell employs the percentage change in the proportion of white students as her definition of "white flight." Notice that this definition considers both the white and black student trends. Rossell argues further that it is the white proportion that has political significance and which may trigger "tipping points" should any exist in the community.

Coleman and Rossell also differ in their conception of desegregation and how to measure it. Coleman, as we have seen, regards any reduction in his global, system-wide index of racial segregation in the schools as evidence of desegregation. He did not seek the origin of such index reductions. Indeed, his many statements to the press assumed the larger reductions to be achieved by governmental actions and usually court orders. The New York Times and others, it will be recalled, noted this to be an inaccurate assumption in many cases. So Rossell has a direct measure of governmental action for desegregation: the percentage of students who were reassigned to schools in order to further racial desegregation.

After all, it is direct governmental action for desegregation, often requiring special transportation, that Coleman has been so assiduously campaigning against in his many press interviews, television appearances, and federal court affidavits. But where he never measured such action directly, Rossell did. This difference in procedure leaves Coleman's analysis open to a major artifact that had been noted by the August 4th review panel at the Urban Institute: Namely, that much of the lowering of his segregation index in particular cities was not the result of "desegregation" efforts at all but simply a temporary result of neighborhood transition. Some of what Coleman labeled "white flight" caused by school desegregation was actually temporary desegregation caused by residential "white flight."

A Fourth Analysis

We have, then, three studies that have utilized basically the same H.E.W. data base on the same problem. Two of them report no relationship between educational desegregation and "white flight"; one reports a significant relationship--though one not nearly as large as represented in the mass media. A number of factors have been cited as possible explanations for this conflict in results between Farley and Rossell, on the one hand, and Coleman, on the other.

The present authors recently completed a fourth analysis to lend, hopefully, some clarification to this complicated analytic puzzle. Our point is a simple one that was alluded to earlier. Much of Coleman's effect may be a function of the particular sub-sets of large urban systems chosen for analysis and emphasis. The inexplicable exclusion and inclusion

of particular cities into the critical final sub-set of the "largest" urban school districts, then, may well enhance the effect at issue.

We tested this additional explanation for the contradiction between the three studies for two interrelated reasons. First, Coleman's choice of the "largest" urban school districts seems somewhat arbitrary on its face. Second, the scatter diagram in Figure 1 suggests that the particular sub-sets of cities he chose to analyse did in fact maximize the probability of his obtaining an association between the loss of white students and desegregation. Let us explore these two points further.

Recall that Coleman did not list the urban districts in his sample in his first paper. Only three months and hundreds of headlines later was the list of the 20 "largest" urban school districts revealed. Washington was immediately dropped for its lack of white students,[23] leaving only 19 in this crucial sub-set of urban districts.

But these are <u>not</u> the largest 19 urban school districts in the United States. Omitted and never mentioned in any of the four versions of Coleman's paper are Miami-Dade, Jacksonville-Duval, and Ft. Lauderdale-Broward, all county-wide urban systems in Florida. On whatever grounds they were excluded, it did not involve the fact that they are metropolitan districts in Florida; Tampa-Hillsborough is also a metropolitan district

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23. We would not question the decision to drop Washington because of its tiny percentage of white pupils, but I wonder why a comparable cut-off was not also employed for districts with tiny percentages of black students. Coleman analyzed Garden Grove, Anaheim, and San Jose, all in California, though they each had less than two percent black school enrollments. This is apparently another example of Coleman's exclusive concentration on white Americans.

in Florida, yet it was included in spite of being smaller than the three missing districts. Like Tampa, Miami and Jacksonville experienced widespread court-ordered desegregation without a significant decline in their white enrollment. Ft. Lauderdale actually experienced a 39.2% increase in white students from 1968 to 1972 while engaged in an extensive desegregation program. Thus, the unexplained exclusion of these three huge districts from Coleman's analysis may have contributed to his finding an effect of desegregation upon "white flight" where Farley's more inclusive sample did not.

Further complications were created when, for his second analysis, Coleman constructed his sub-set of "largest" urban districts to include Denver and San Francisco. These two additions, raising the number of cases from 19 to 21, were made because they "were two of the few northern cities to undergo extensive desegregation during the period 1968-73..."[24] Albuquerque, whose system is larger than that of San Francisco, was excluded by invoking a new criterion: it "is not among the first 50 in population."[25] No mention is made, however, of Nashville-Davidson, a system larger than San Francisco in an area ranking 30th in population, which had more court-ordered desegregation during these years than either Denver or San Francisco.

Nor is a rationale provided for why the line was drawn after San Francisco. This cut-off is particularly perplexing considering the fact

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24. Coleman Four, footnote 22, p. 56.

25. Ibid., footnote 22, p. 56.

that the next urban school system in size is that of Charlotte-Mecklenburg, North Carolina. This is the district involved in the critical Swann opinion of the U.S. Supreme Court that Coleman attacked as too sweeping in his Boston television appearance. Under court orders, this metropolitan district achieved a larger drop in Coleman's segregation index than any in his big-city sample save Tampa.

A less arbitrary cut-off could have been achieved by following Farley's procedure of choosing all urban school districts which had over a certain number of students in a given year. Employing Coleman's own rankings by 1972 enrollment, a cut-off of all urban districts with more than 75,000 students would not only have included Miami, Jacksonville, Ft. Lauderdale, Denver, Nashville, Albuquerque, and San Francisco but also Charlotte, Newark (New Jersey), Cincinnati, and Seattle. All of these additional cities are among the nation's 50 largest cities except Albuquerque, Ft. Lauderdale and Charlotte.

To test the effects of these various selections of urban school districts, we employed Coleman's time period (1968-1973), his definitions of "white flight" and desegregation," even his data as provided in Appendix of the fourth version of his paper.[26] We also employed the two principal control variables that Coleman used in both his initial and later analyses--the black student proportion and the natural logarithm of the total size

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26. Ibid., pp. 99-121. We utilized the data for all school levels combined. Later Coleman discovered that major errors had been made in his analyses of elementary school enrollments (Coleman Five), but these errors do not affect our present results. For the four cities omitted from Coleman's analyses and Appendix 3 (Miami, Ft. Lauderdale, Jacksonville, and Nashville), enrollment data are from the same H.E.W. source utilized by Coleman; and their desegregation estimates are taken from Farley's index for elementary desegregation, 1967-72, which for other districts closely approximate those of Coleman's index for all grade levels, 1968-73.

of each school system. However, in order to avoid the error introduced by residential transition, we used Farley's over-time method of comparing 1968 data with those of 1973 rather than Coleman's year-by-year procedure.

Figure 1 presents our basic data in simplest form. The unmarked points on the graph are the original 19 of Coleman's big-city analysis; the two circled points denote Denver and San Francisco that were later added by Coleman for his final big-city sample of 21; the four points in triangles denote Miami, Jacksonville, Ft. Lauderdale, and Nashville that should have been included in the sample of the country's "largest" urban school districts; and the five points in boxes denote Albuquerque, Charlotte, Newark, Cincinnati, and Seattle that would be included if a standard cut-off of 75,000 students in 1972 were applied.

Figure 1 indicates the relationship between the amount of desegregation from 1968 to 1973 across the abscissa and the percentage change in white enrollment over these same years down the ordinate. The graph is further sub-divided at the medians into four quadrants: high desegregation and low loss of white students; high desegregation and high loss; low desegregation and low loss; and low desegregation and high loss. The relationship at issue requires a strong tendency for these 30 cities to lie in a lower-left to upper-right diagonal; that is, they should fall predominantly in the high desegregation-high loss and the low desegregation-low loss quadrants.

The first thing to notice about Figure 1 is that the heralded positive association does not exist. Only a minority of the 30 cities fall in the two predicted quadrants ($r = -.30$). This replicates Farley's re-

sults. The second thing to notice is how important the two extreme points in the lower left are for Coleman's argument. Not surprisingly, these points denote Memphis and Atlanta. Throughout our discussion we have emphasized how critical these two cities are in Coleman's statistics; Figure 1 shows how unique they are among the nation's 30 largest urban school systems. Next notice that Denver and especially San Francisco are in the high desegregation and high loss quadrant; recall these are the two districts added as an afterthought for Coleman's second analysis.

Now check where the points are that denote the nine c ties that should have been included in the big-city sample. Six of the nine are located in the high desegregation and low loss quadrant, including all four of the districts larger than that of San Francisco. The remaining three, Cincinnati, Newark, and Seattle, are located in the low desegregation and high loss quadrant. In short, the two additions Coleman made to his sub-set of big-cities for his second analysis contributed to his obtaining a positive association between these two variables; the nine he left out would have severely reduced the association.

Figure 2 considers the same 30 urban districts, but relates the 1968 black proportion of the enrollment to the changes in white enrollment from 1968 to 1973. Note the strong association that now emerges: those districts that had relatively high proportions of black students in 1968 tended to lose the largest proportions of white students over the next five years ($r = +.57$). Clearly, as Coleman has stated, such a strong predictor must be controlled before a fair test can be made of the effect of desegregation.

Just as Figure 2 shows spatially, the Pearson correlation coefficients in Table 1 reveal that the key variable is the 1968 black pupil proportion. Its first-order coefficients (Column A) in all five samples of cities are virtually identical with the multiple coefficients obtained with all three predictors (Column D) as well as its partial coefficients obtained when holding the other two predictors constant (Column E). In short, neither the desegregation nor the system size variables are predicting the percentage changes in white enrollments over this five-year span. Controlling for the proportion black and system size variables in the partial correlations using desegregation as the predictor does decrease its negative relationship with white student loss, but the coefficients remain trivial (Columns B and F). Moreover, there are small but interesting changes in these five partial coefficients for desegregation among the various sub-sets of cities (Column F). Just as Figure 1 indicated, there is a slight improvement in the prediction when Denver and San Francisco are added to the original 19 cities (Rows A and B; from +.059 to +.087). Then there is a drop in the coefficient for the 27 districts whose cities all rank nationally among the top 50 in population (Row C; from +.087 to +.023). Likewise, there are drops in the coefficient when the four districts all larger than San Francisco are added to Coleman's 21 (Row D; from +.023 to -.108) and for the full 30 districts (Row E; from -.108 to -.123). Indeed, the final two coefficients show a modest negative relationship between desegregation and white loss, though they do not approach statistical significance ($p = .27$).

This third failure to replicate Coleman's "white flight" results, consistent with the findings of both Farley and Rossell, demonstrates the

critical importance to Coleman's study of the rather special and arbitrary sub-set of "largest" urban school districts which he chose to analyze and emphasize.

But the plot thickens further as we push our analysis beyond that of Coleman's. He largely confined his analysis and interpretation to white Americans; yet, obviously, the policy issue even more crucially involves black Americans. Table 2, then, repeats the analysis of Table 1 for the percentage gains in black student enrollment. This analysis employs the same three independent variables and the same five sub-sets of large urban districts.

We should first clarify one potentially confusing difference between Tables 1 and 2. In Table 1, following Coleman, we were using white losses in enrollment; now in Table 2 we are looking at black gains in enrollment. This change in focus is caused by the larger demographic shifts described earlier; 27 out of these 30 districts lost whites between 1968 and 1973, while 25 of the 30 gained blacks. Nevertheless, these two dependent variables, white losses and black gains, are negatively correlated (for the full 30 cities, $r = -.34$, $p = .05$). In other words, white and black enrollemnts across these large urban districts are positively associated, and thus tended to rise or fall together during this five-year period.

A comparison of Table 2's results with those of Table 1 highlight these related racial trends. The system's proportion of black students in 1968 remains throughout both tables and all sub-sets of districts the principal predictor; the higher the proportion, the greater the white losses and the smaller the black gains. Apart from directly racial reasons for

these relationships, the fact that both variables react the same way to cities with high proportion black enrollments suggests that this variable is also a surrogate for other factors. Thus, large cities with a high proportion of blacks often have highly unfavorable tax bases and financial problems (consider New York City's present plight); they are also often losing employment and have particularly old housing stocks.

But of greater interest to our present concerns is the contrasting operation of the desegregation variable in the two tables. In Table 1, we have noted virtually no effect of desegregation upon white losses, though there was some slight variation according to which sub-set of big-city systems was utilized. Yet in Table 2, across all five sub-sets of districts, desegregation has a modest but consistent positive association with black gains (Column B). Part of this relationship is due to the indirect effect that cities with low proportions of blacks have had more desegregation; thus, the coefficients are substantially reduced when proportion black and system size are controlled for (Column F).

These analyses of white and black student enrollments leads to a conclusion that starkly contrasts from that of Coleman's. When viewed in the perspective of a five-year trend, desegregation had no discernible effect on the overriding general trend of white enrollment losses in the nation's truly "largest" urban school districts. It is particularly important for policy-makers to observe that districts which are metropolitan in scope (Miami, Ft. Lauderdale, Jacksonville, Tampa, Nashville, and Charlotte) are especially immune from the phonomenon (Figure 1). But desegregation may have a small effect in enlarging black enrollments by, perhaps, providing hope to black communities that public education for their children will improve. This possible black increase could come

about in a variety of ways--an increase in the in-flow of black parents attracted to the district, a decrease in the out-flow, or a cut in the drop-out rate of black children. In any event, this suggestion of an effect of desegregation on black enrollment appears both small and tentative. Our larger point is simply that a rounded scientific and policy perspective on interracial processes requires careful attention to black as well as white Americans. Both Coleman's analysis and policy arguments focus almost exclusively on whites.

Weaknesses in Coleman's Last Analysis

Recall that the first crude analysis which began the episode was quietly abandoned in July, while the second analysis produced results that conflicted with those of other investigators. Hence a third analysis was introduced. Although it involved the crudest design of all three, it has been emphasized by Coleman in public statements since last August and has been characterized as a "rough test."

Performed on various sub-sets of what Coleman continued to call "the largest" central city school districts, this third analysis developed estimated losses of white students for the years 1969-1973 by projecting forward the actual losses during the single year 1968-69. Next Coleman grouped the districts into two sets for comparison: those that had a reduction of .10 or more on his school segregation index during the period 1968-1973, and those that did not.

The first problem with this "rough test" is the small and selected sample. Just three of the ten desegregating districts (the original eight plus Denver and San Francisco) provide most of the "effect," and not surprisingly all three of these cities are in the deep South. When Memphis,

Atlanta, and New Orleans are removed from the analysis, the remaining seven desegregating districts present a different picture (18% loss instead of a predicted 11%).

This raises the second problem of the lack of controls. Coleman emphasizes that this new analysis is "more stringent" because the 1968-69 base-line projections cause each city to act as its own control. But this ignores the fact that desegregation is now being defined in a crude, dichotomous fashion and that the lack of control now involves differences between these two types of cities.

But the most serious problem with this third analysis is its reliance upon only one base-line year to establish its projections. One year is simply too unreliable an estimate upon which to base a whole analysis for public consumption.

A Proposed Resolution

Since all four analyses basically employ the same H.E.W. data base, there should be an underlying resolution of the discrepant findings. We believe there is such a resolution, and it consists of the following six generalizations that one or more of the four studies support and none contradict.

(1) There has been an enormous, long term trend of whites leaving the central cities for the suburbs and blacks coming into the largest central cities. This trend began after World War I in many areas, gained momentum after World War II throughout the nation, and represents a "triumph of national housing policy."[27] It therefore antedated school desegregation by decades.

(2) There is agreement among the studies that there is little or no effect of desegregation on the "white flight" of students in medium- and smaller-sized cities. The few apparent exceptions to this generalization often involved special factors unrelated to desegregation.

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27. Orfield, op. cit., pp. 18-20.

(3) There is also agreement that there is little or no effect of desegregation on the "white flight" of students in metropolitan-wide districts.

(4) Desegregation required by federal court orders has not had different effects on "white flight" from other desegregation of equal magnitude.

(5) The loss of white and black students from large urban school systems is significantly related to the proportion of black students in the systems. Two qualifications must be inserted for this generalization. First, there is considerable variance across cities in this relationship. Farley found it held for whites in his 50 southern cities but not in his 75 northern cities. But in general, as revealed in Tables 1 and 2, the relationship holds for both races. Second, the fact that both white and black enrollments related in the same way with proportion black suggests that, in addition to racial factors, this variable also acts for a range of variables that separate cities with high black percentages from those with low percentages--receding tax bases, older housing, higher unemployment rates, etc.

(6) Extensive school desegregation in the largest, non-metropolitan school districts, particularly in the South, may hasten the "white flight" of students in the first year of the process; but at least part of this effect may be compensated for in later years. Coleman showed only a one-year effect, part of which reflected neighborhood transition. Rossell also showed this effect in the first year for rapidly desegregating urban districts in the North. But she showed, too, that by the second and third

years these same districts have an average rate of reduction in their white proportions below both their own pre-desegregation rate and those of other districts. This phenomenon helps to explain the difference in findings between those analyses that investigate changes over a span of years, such as Farley's and ours, and Coleman's year-by-year design. Some white families may well hasten their already-formed plans to move to the suburbs with the onset of school desegregation, especially if there is negative political leadership as in Memphis and Boston. But a longer period of observation suggests that this first-year loss is recovered through a lower-than-normal loss in later years.

Social Science and Public Policy

Studying Coleman's position has not been easy. The information necessary to evaluate Coleman's much-publicized research has been consistently difficult to obtain. Throughout the furor there has been a confusion between his limited research and his sweeping views against court-ordered desegregation. And when these views were questioned, the critics were repeatedly made the objects of ad hominem abuse. We do not wish to answer in kind. We believe that the whole episode goes far beyond the immediate personalities and even the racial issues involved in that it raises painful questions of how social science should relate responsibly to public policy and the ethics involved in this relationship. This extensive campaign to alter public policy by such a prominent social scientist highlights the thorniest aspects of this problem that must be faced.

From April until August, the social science community was not provided the analysis upon which Coleman's widely-publicized opinions were

reportedly based. The details of the first analysis that began the campaign were never released, for the second draft of the paper with analytic details completely abandoned the first analysis and presented an entirely new analysis with a radically different research design. Indeed, a third entirely different analysis was not introduced until September. All told, there have been three contrasting analyses, and four editions plus a 39-page erratum edition of the paper extending over a seven-month period. The views did not change, but the research upon which they were said to be based were constantly changing. Telephone calls to the Urban Institute in June requesting methodological detail were summarily rejected on the grounds that the analysis was "still in progress." Yet this was after two months of nationwide publicity of policy recommendations that were said to flow from this "still-in-progress" research.

What made the four-month delay even more "unfortunate" was the consistent confusion between Coleman's personal opinions and his research findings. Most of the hundreds of articles and editorials that have been written about the episode advanced Coleman's views as if they were the results of a new and massive study of urban desegregation. Yet the connection between Coleman's views and Coleman's research data is tenuous at best and quite conflicting.

Every social scientist, like any other citizen, has a right to express his full political views on any subject without the support of research results. Ethical problems arise, it seems to us, when the social scientist's views are put forward not as political opinions at all but as results of his own extensive scientific investigation, as "new insights from recent research."

Further problems arise when strongly worded, ad hominem attacks enter the controversy. Some critics have employed such attacks upon Coleman; and we have seen how Coleman has consistently employed similar attacks upon virtually all of his critics regardless of the moderation of their opposition. We regret such ad hominem remarks deeply. They make "good copy" for the mass media, perhaps, but they cheapen the debate, lower the public's respect for social science, and divert public attention away from the real issues.

Coleman's personal attacks upon us and others all suggest that he is thoroughly and unquestioningly certain that his views are correct. Those who dare disagree with him must suffer from "motivated blindness," must be part of "a kind of conspiracy of silence," must mistake race riot fires for "an extrordinary display of the Northern lights," or must be "a lot of old people who would rather pursue a common path and attempt to ignore the fact that this [desegregation] may be having unintended and undesired consequences." Agreeing with conventional wisdom on the subject, he sees massive "white flight" in major cities as a consequence of court-ordered desegregation to be so completely obvious that his many critics must have forsaken their social science training for their unrealistic political hopes. We all believe in our own ideas; but, when dealing publicly with issues of enormous policy significance, we have a special obligation to at least entertain the hypothesis that we may be wrong whatever "our fond hopes about it."

We firmly believe that social science can and should responsibly influence public policy on issues in which it can competently bring research and theory to bear. Perhaps, specialized groups of social scientists, checked in part by peer review, can perform this task best. Individual social scientists can also carry out this function responsibly by basing their views on published and widely available material in situations, such as court rooms and legislative committee hearings, where they subject themselves to formal cross-examination or at least informed questioning. But intensive campaigns through the mass media present a hazardous means of injecting social science input into the political debates on policy.

Philip Meyer, of the Knight Newspapers, the Russell Sage Foundation, and a few other individuals and organizations have directed attention in recent years to this dangerous lack of fit between the mass media and social science. But unless structural changes are made in both institutions and each learns to take the other more seriously, the nation will continue to witness examples of extremely inadequate reporting of social science findings relevant to public policy. This situation commits a disservice to the public as well as to the media and social science. In time, the public might understandably conclude from the seemingly "conflicting research results" and the stream of ad hominem attacks that social scientists have nothing to contribute to policy debates except their own highly politicized opinions.

TABLE 1

PREDICTION OF WHITE ENROLLMENT CHANGES (1968-73)

FOR VARIOUS SUB-SETS OF LARGE SCHOOL DISTRICTS

	First-Order Correlations			D. 3 Variable Multiple Correlation	Partial Correlations	
	A. Prop. of Blacks, 1968	B. Desegregation 1968 - 73	C. Natural Log System Size, 1972		E. Prop. Black with Size & Desegregation Held Constant	F. Desegregation with Size & Prop. Black Held Constant
A. Original 19 Districts	+.610	-.062	+.003	.612	+.610	+.059
B. Original Districts Plus Denver and San Francisco	+.522	-.026	.040	.535	+.531	+.087
C. 27 Districts Whose Cities Rank in 50 Largest	+.577	-.174	-.081	.583	+.556	+.023
D. 21 Districts of B. Plus Miami, Jacksonville, Nashville, & Ft. Lauderdale	+.516	-.256	+.034	.525	+.470	-.108
E. Full 30 Districts	+.574	-.298	+.020	.584	+.523	-.123

Data Sources: For the original 19 "largest" school districts plus those of Denver, San Francisco, Albuquerque, Newark, Charlotte, Cincinnati, and Seattle, the data for these analyses are taken from J. S. Coleman, S. D. Kelly, J. A. Moore, "Trends in school segregation, 1968-73." The Urban Institute, Washington, D.C., August 1975; Appendix 3. For the four cities omitted from Coleman's analyses and Appendix 3 (Miami, Ft. Lauderdale, Jacksonville, and Nashville), enrollment data are from the same H.E.W. source utilized by Coleman; and the desegregation estimates are taken from Farley's index for elementary desegregation, 1967-72, which for other districts closely approximate those of Coleman's index for all grade levels, 1968-73.

TABLE 1a

COLEMAN'S BASIC REGRESSION COEFFICIENTS FOR ANALYSES

OF WHITE STUDENT LOSS TO CENTRAL CITIES

Equation 1	"Largest" 21	Next 46
ΔR (desegregation)	.279 (.062)	.056 (.026)
Prop. black students	-.133 (.028)	-.090 (.014)
ln N (system size)	.000 (.008)	-.042 (.010)
Constant	.013	.452
R^2	.29	.26
Number of Observations	(105)	(226)

Including inter-district segregation in SMSA, and interaction of desegregation with South:

Equation 2		
ΔR (desegregation)	.199 (.156)	-.148 (.137)
Prop. black students	-.044 (.039)	-.035 (.016)
ln N (system size)	.066 (.008)	-.041 (.010)
R SMSA	-.165 (.050)	-.110 (.021)
ΔR x S	.143 (.170)	.242 (.137)
Constant	-.059	.438
R^2	.36	.35

Including interactions of desegregation with proportion black and inter-district segregation, and also including South as a dummy variable:

Equation 3		
ΔR (desegregation)	-.459 (.184)	-.349 (.151)
Prop. black students	.051 (.037)	-.026 (.019)
ln N (system size)	.003 (.006)	-.039 (.009)
R SMSA	-.210 (.044)	-.102 (.025)
ΔR x South	.148 (.198)	.244 (.145)
ΔR x Prop. black	1.770 (.307)	.511 (.215)
ΔR x R SMSA	.561 (.494)	.894 (.314)
South	-.006 (.010)	-.002 (.006)
Constant	-.089	.414
R^2	.60	.40

Source: J.S. Coleman, S.D. Kelly, and J.A. Moore, "Insert for trends in school segregation, 1968-73." (Unpublished erratum, October 1975) Urban Institute, Washington, D.C.; p. 37.

TABLE 16

Table 16. REDUCTION IN SEGREGATION 1968-1973, EXPECTED AND ACTUAL LOSS OF WHITE STUDENTS 1969-1973, 22 LARGEST CENTRAL CITY DISTRICTS

District	Reduction in Segregation	Proportion of Whites Present in 1969 Lost by 1973	
		Expected (based on city's 1968-69 loss[1])	Actual
1. New York	(+) .03	.11	.16
2. Los Angeles	.07	.15	.20
3. Chicago	(+) .02	.16	.25
4. Philadelphia	(+) .08	.13	.13
5. Detroit	.04	.33	.30
6. Houston*	.17	.19	.29
7. Baltimore	.02	.10	.16
8. Dallas*	.22	.05	.25
9. Cleveland	(+) .02	.21	.12
10. Washington	.04	.36	.42
11. Memphis*	.61	(+) .10	.37
12. Milwaukee	.02	.07	.16
13. San Diego*	.13	.01	.08
14. Columbus, Ohio	.04	.07	.12
15. Tampa*	.74	(+) .09	(+) .11
16. St. Louis	(+) .03	.17	.25
17. New Orleans*	.15	.14	.38
18. Indianapolis*	.28	.10	.24
19. Boston	(+) .03	.11	.15
20. Atlanta*	.37	.26	.59
21. Denver*	.38	.09	.20
22. San Francisco*	.31	.39	.33
*Average for 10 cities which had 0.1 or more reduction in segregation.		.10	.26
Average for 12 cities which had less than 0.1 reduction in segregation.		.17	.20

[1] Expected loss equals $1 - (1-x)^4$, where x equals the proportion white students lost in 1968-69.

TABLE 1c

CHANGES IN THE WHITE STUDENT PERCENTAGE

BEFORE AND AFTER SCHOOL DESEGREGATION

School District	% Students Reassigned	Court Ordered	Change in % White Students -7 Years	-6 Years	-5 Years	-4 Years	-3 Years	-2 Years	-1 Year	Major Plan Date	Change in % White Students +0 Years	+1 Years	+2 Years	+3 Years	+4 Years	+5 Years	+6 Years	+7 Years	Signif. Level	Pre-Slope	Post Slope	Total Decr.
Pasadena, Calif.	98.48	yes		-2.7	-1.5	-1.9	-2.1	-2.0	-2.4	1970	-4.2	-4.5	-2.5*						.01, .05	-2.0	-3.5	100.4
Exeter, Mich.	83.47	yes		-1.3	-1.0	-3.0	-3.1*	-1.7	-2.4*	1971	-5.4	-.4							.02, .02	-2.2	- .4	87.09
Berkeley, Calif.	57.72					-2.2*	-2.2	.7	-1.6	1968	-2.2	-.6	-.8	.2	.5				N.S.	-2.2	- .4	66.32
Wichita, Kansas	44.36			*	-.8*	-.4	-.6*	-1.0*	-1.0*	1971	-1.3	-1.4							N.S.	- .7	-1.4	56.63
San Francisco, Calif.	42.49	yes			-2.9	-1.2	0	-4.1	-.2	1971	-3.0	-2.1*							N.S.	-1.6	-2.1	44.58
Ft. Wayne, Indiana	34.60				-.4	-.5	-1.6	.2	-1.1	1971	-.8	-1.0							N.S.	- .8	-1.0	34.00
Waukegan, Ill.(el.Sch's)	31.72	yes				-1.3	-3.5	-7.8	-1.1	1968	-1.8	-1.9	-1.1	-1.0	-1.9				N.S.	-3.9	-1.4	31.72
Denver, Colo.	24.64	yes				-1.3	-1.4	-1.5	-.6	1969	-1.5	-2.4*	-1.4	-2.0*					N.S.	-1.3	-1.9	29.77
Providence, R.I.	24.10									1967		-2.0	.2	-.2*	-1.7*	-1.0			*	*	*	36.00
Riverside, Calif.	21.40							.7	-.6*	1966	-1.5	-1.2*	.9	-2.2*	-1.0	-1.4	-1.5		N.S.	-.7	-1.1	32.20
Las Vegas, Nevada	19.24	yes					.3	-.6*	-.6*	0	1972	-.6							*	*	*	30.05
Evansville, Indiana	15.77	yes		-.1*	-2.2	-.3	-.1	1.2*	-.3*	1972	-.7								*	*	*	29.57
Muncie, Indiana	15.10					.3	-.9	-2.6	1.9	1972	-.3								*	*	*	15.10
Stamford, Ct.	13.20				-2.6	-1.3*	-.8	-1.5*	-1.8	1970	-1.5	-.9	-1.5						N.S.	-1.5	-1.2	21.42
Niagara Falls, N.Y.	11.76						*	-.6*	-.6	1970	-1.3	-.5	-.7						N.S.	- .5	- .6	30.24
Sacramento, Calif.	11.10	yes						*	-1.3	1966	-.2	1.2	-.3*	-1.0	-1.1	-1.1	-1.0		*	*	*	19.98
Oklahoma City, Okla.	10.82	yes						-2.2	-1.1	1964	-1.6	-4.9	-1.2*	-.4	-1.6				N.S.	-1.7	-1.8	31.50
Saginaw, Mich.	9.60					-2.6	- .5	- .6	-2.3	1972	-2.2								*	*	*	9.60
Grand Rapids, Mich.	9.60									1966	-3.4	-.8	-.3	-1.8	-2.2*				*	*	*	16.24
Springfield, Mass.	9.10					-1.6	-1.8	.5*	-3.2*	1968	-1.3	-1.9	-2.7	-2.2	-2.0*				N.S.	-1.4	-2.3	23.05

Con't.

Table 1c continued

School District	Students Reassigned	Court Ordered	Change in % White Students -7 Years	-6 Years	-5 Years	-4 Years	-3 Years	-2 Years	-1 Year	Major Plan Date	Change in % White Students +0 Years	+1 Years	+2 Years	+3 Years	+4 Years	+5 Years	+6 Years	+7 Years	Signif. Level	Pre-Slope	Post Slope	Total Desegr.
Ann Arbor Mich.	9.00								-.5	1965	-.1	-.1	-.9	-2.3	-.6	-.8	-1.1	-1.2*	a	a	a	15.48
Lexington, Ky.	8.91									1963		.2	0	-.4*	-.3	-.4			a	a	a	9.66
Baltimore, Md.	7.92			-6.2	-1.5	-6.0	-1.0	-1.1	-.9	1973	-1.1	-1.1							N.S.	-2.4	-1.1	7.92
Tulsa, Oklahoma	7.83	yes		-.1	-.2	-.4	-4.8	-.1	-.6*	1971	-.5*	-1.9*							N.S.	-1.2	-1.9	14.36
Peoria, Ill.	7.83									1968	-.6	-.9*	-1.0*	-1.1*	-1.4*				a	a	a	15.86
Cambridge, Mass.	7.30		-.6	0	-.1	-1.8	0	-1.2	-.9	1972	-.9	2.0							N.S.	- .7	-1.9	7.3
Lansing, Mich.	7.18					-.2	-.6	-1.1	-2.2*	1969	-.7	-1.5*	-1.4	-2.1*					N.S.	-1.0	-1.7	22.34
Racine, Wisc.	6.80							-1.1*	-.6*	1967	-.5	-.4	-.7*	-.8	-.1	-.9			N.S.	- .8	- .6	12.30
Tacoma, Wash.	6.50						-.7	-.7	-.1	1968	-1.4*	-.6*	-.9	-.9*	-.1				N.S.	- .6	- .7	9.44
San Bernardino, Calif.	5.10						-.9*	-.1	-.7	1970	-.8	-1.3	-.5						N.S.	- .9	-1.0	7.10
Minneapolis, Minn.	4.90			-.6	-.4	-1.5	-1.0*	-1.3	-1.6*	1971	-1.5	-1.3							N.S.	-1.0	-1.3	11.26
Waterbury, Ct.	4.80							-2.4	-1.3	1970	-.9	-1.7	-.5						N.S.	-1.9	-1.5	4.30
Rochester, N.Y.	4.30			-2.4	-2.5	-1.6	-3.0	-2.8	-2.4*	1971	-3.3	-3.1							N.S.	-2.4	-3.1	5.16
Seattle, Wash.	4.14		-1.0	-1.1*	-1.5	-.6	-.8*	-.9	-1.6	1971	-1.5	-1.1							N.S.	-1.0	-1.1	10.25
Dayton, Ohio	3.20								-.6	1969	-1.1	-1.4*	-2.0	-2.0					a	a	a	3.96
Buffalo, N.Y.	3.20									1967	-2.5	-4.0*	-1.3*	-1.3*	-1.2	-2.2			a	a	a	5.79
Warren, Ohio	2.80								-.5	1969	-.7	-.3	-.5	-.9					a	a	a	2.80
St. Paul, Minn.	2.57									1965		*	*		-1.0	-.5	.7	-.5	a	a	a	6.77
South Bend, Indiana	2.50				*			-1.3	-1.0	1970	0	-1.2	-.9			(less decline than expected)			N.S...05	-1.2	-1.0	3.80
Rockford, Ill.	2.40								.7	1969	.9	-1.3	-.6	-1.1					a	a	a	2.40
Flint, Mich.	2.39						-3.5	-1.5*	-2.0	1971	-2.9	-1.7*							N.S.	-2.3	-1.7	3.69
Syracuse, N.Y.	2.20						-2.6	-1.4	-1.7*	1967	-1.9	-1.8*	-1.7	-2.0	-1.7	-2.0*			N.S.	-1.9	-1.8	3.65

Con't.

Table 1c continued

School District	Students Reassigned	Court Ordered	% White Students -7 Years	-6 Years	-5 Years	-4 Years	-3 Years	-2 Years	-1 Year	Major Plan Date	+0 Years	+1 Years	+2 Years	+3 Years	+4 Years	+5 Years	+6 Years	+7 Years	Signif. Level	Pre-Slope	Post Slope	Total Desegr.
Colorado Springs, Colo.	2.10							.4*	-.3	1971	-.1	-.2							a	a	a	2.30
Indianapolis, Ind.	2.02	yes			-1.3	-1.0	-.2	-1.4	-1.7	1970	-1.1	-1.9*	-1.7*						N.S.	-1.0	-1.8	3.06
New York, N.Y.	1.76				-2.0	-1.9	-1.8	-1.6	-2.2	1964	-2.6	-2.9*	-2.0*	-3.0*	-2.9*	-3.3*	-2.3*	-1.4	-1.3 .02,N.S.	-1.9	-2.5	7.67
Pittsburgh, Pa.	1.44							-.3	-.5*	1968	-1.7	-.3*	-.5*	-.4	-.8	-.8*			N.S.,.02	- .4	- .6	3.18
Toledo, Ohio	1.20								-4.3	1969	-.5*	.2	-1.0*	-.2					a	a	a	1.37
Waterloo, Iowa	1.91							-.6*	-.4	1971	-.6	-.4							a	a	a	2.25
Gary, Ind.	1.30									1967		-2.2	-1.6	-1.3	-2.4	-1.5*			a	a	a	1.64
Milwaukee, Misc.	1.10		*			-.3	-2.4	-.3	-2.5	1972	-1.9								a	a	a	2.02
Louisville, Ky.	.83					-.9	-1.2	-1.0	-.5	1972	-2.2								a	a	a	.83
Des Moines, Iowa	.82							*	0*	1969	-.1	-.4	-.3	-.6					a	a	a	1.10
Los Angeles, Calif.	.66						.2*	-1.5	-1.8*	1971	-1.6	-1.5							a	a	a	1.56
E. St. Louis, Ill.	.29									1967		-3.7	-2.5*	-4.2	-4.3*	-4.4			a	a	a	.73
Kansas City, Mo.	.26					-2.4	-1.9	-2.7*	-1.6	1969	-1.8	-1.6	-1.9	-2.3*					N.S.	-2.2	-1.9	.44
Detroit, Mich.	.25					-4.5	-1.8	-1.9	-1.9	1967	-1.3	-1.9	-2.8	-2.0*	-1.2*				N.S.	-2.6	-2.1	.26
San Diego, Calif.	.19							-1.2	-2.0	1967	-3.6	.1	-.5	-.2	-.4	-1.3			N.S., .01	-1.6	- .4	.19
Chicago, Ill.	.17						-1.4	-1.4	-4.9	1968	-3.7	-1.6*	-1.5*	-2.0	-1.8*				N.S.	-2.4	-1.7	.46
Philadelphia, Pa.	.02		-2.0	-3.0	-1.0	-3.3	-1.4	-.9	-1.1	1972	-.1								a	a	a	.02
Hartford, Ct.	.01						-3.8	-3.7	-2.5	1968	-3.6	-4.7	-3.7	-1.9	-2.3				N.S.	-3.3	-3.8	.01
Control Groups																						
Akron, Ohio	0						-1.0	-1.0	-1.0	----	-1.0	-.7	-.9	-.5	-1.1					a	a	0
Albany, N.Y.	0								-3.1	----	-1.8	-2.2	-1.1	-1.1	-1.1					a	a	0
Albuquerque, N.M.	0									----		-1.3	-.3	-.5	-.4					a	a	0

Con't.

Table 1c continued

School District	Students Reassigned	Court Ordered	% White Students -7 Years	-6 Years	-5 Years	-4 Years	-3 Years	-2 Years	-1 Year	Major Plan Date	+0 Years	+1 Years	+2 Years	+3 Years	+4 Years	+5 Years	+6 Years	+7 Years	Signif. Level	Pre-Slope	Post Slope	Total Desegr.
Boston, Mass	0						-1.4	-.3	-1.5	----	-3.9	-2.5	-1.9	-2.6	-1.9				.05, .01	-1.0	-2.2	0
Camden, N.J.	0									----	-4.4	-2.7	-2.3	-2.8	-1.8				a	a	a	0
Charleston, W.Va.	0									----	.1	-.2	0	-.1	.1				a	a	a	0
Cleveland, Ohio	0									----	.2	-1.2	-1.0	.1	-.3				a	a	a	0
E. Orange, N.J.	0									----	-4.7	-3.9	-3.2	-3.4	-2.6				a	a	a	0
Erie, Pa.	0									----	-.3	-.7	-.6	-.2	-.9				a	a	a	0
Hamilton, Ohio	0									----	-.2	-.2	.3	-.2	-.2				a	a	a	0
Jersey City, N.J.	0									----	-3.9	-2.1	-2.9	-1.0	-2.0				a	a	a	0
Kansas City, Kansas	0									----	-3.3	-1.6	-.9	-2.0	-1.7				a	a	a	0
Lima, Ohio	0									----	-1.3	-1.5	-.5	-1.6	.6				a	a	a	0
Omaha, Neb.	0									----	-1.3	-.6	-.1	-.5	-.6				a	a	a	0
Newark, N.J.	0							-3.0	-2.2	----	-2.7	-2.9	-.9	-2.0					N.S.	-2.6	-1.5	0
Santa Monica, Calif.	0									----	.1	-.6	-2.1	-.6	-.9				a	a	a	0
Trenton, N.J.	0									----	-4.1	-2.2	-1.9	-1.8	-.9				a	a	a	0
Utica, N.Y.	0									----	-1.3	-.6	-.7	-1.4	-.5				a	a	a	0
Washington, D.C.	0			-2.3	-1.9	-1.8	-1.6	-1.5	----	-2.1	-.6	-.5	-.6	-.4					N.S.	-1.8	- .5	0
Portland Oregon	0						-.6	-.3	-.2	----	-2.5	-.9	-.6	-.9	-1.1				.02 , .01	- .4	- .9	0
Passaic, N.J.	0									----	-7.8	-2.6	-3.7	-3.4	-2.4				a	a	a	0
Paterson, N.J.	0									----	-3.8	-3.1	-3.9	-2.3	-1.5				a	a	a	0
Phoenix, Ariz.	0									----	-1.4	-1.1	0	-1.2	0				a	a	a	0
Wilmington, Del.	0						-3.0	-2.3	-3.4	----	-3.9	-7.1	-3.9	-2.3	-1.8				N.S.	-2.8	-3.3	0
Youngstown, Ohio	0									----	-.1	-2.0	-1.4	.4	-1.6				a	a	a	0
Springfield, Ill.	0									----	-.5	-1.1	- .5	- .4	-1.0				a	a	a	0

[a]Unable to compute.

Source: Christine H. Rossell, "The political and social impact of school desegregation policy: A preliminary report." Paper delivered at the 1975 meeting of the American Political Science Association in San Francisco, Sept. 2-5, 1975; Table 10.

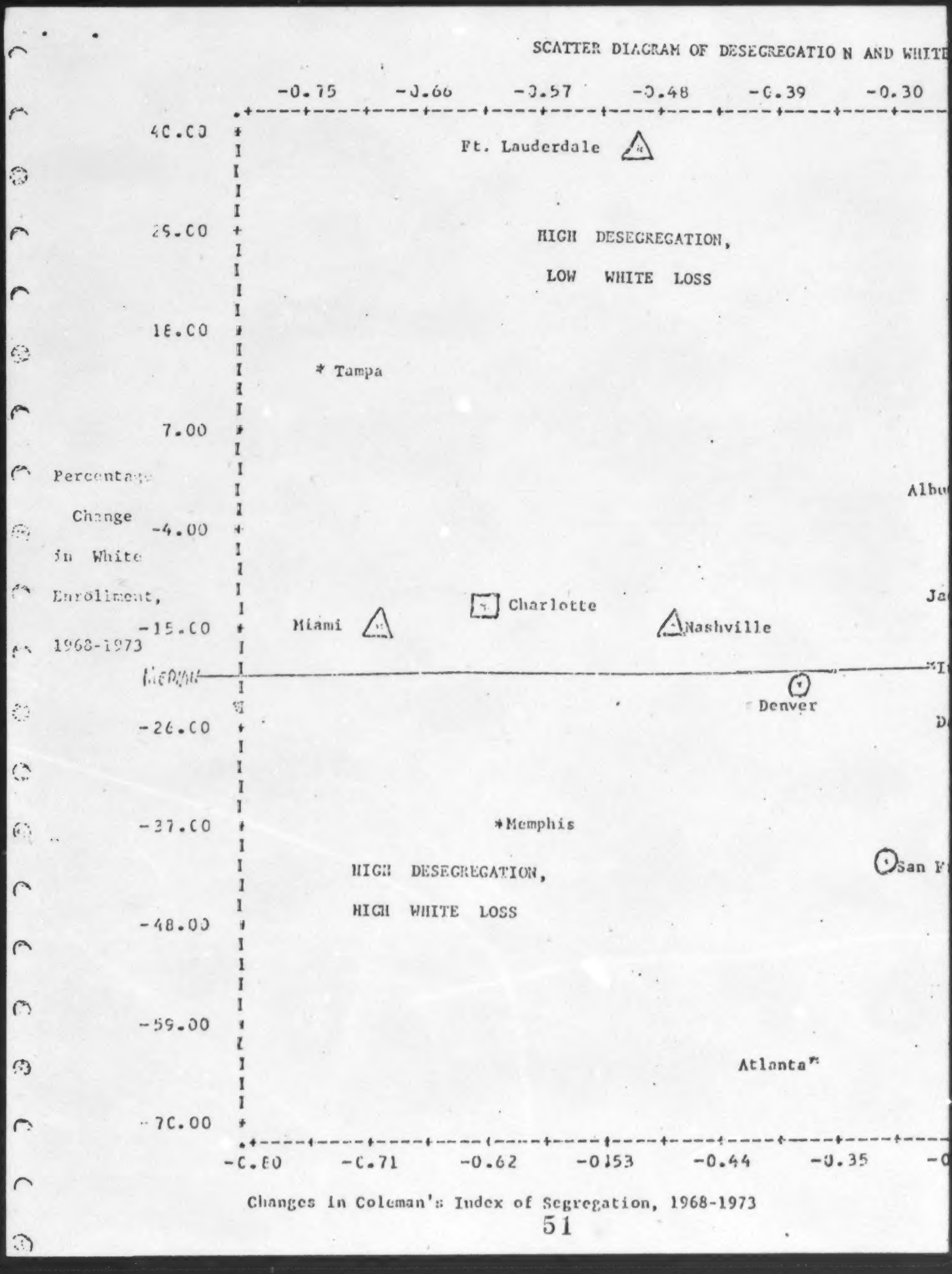
TABLE 2

PREDICTION OF BLACK ENROLLMENT CHANGES (1968-73)

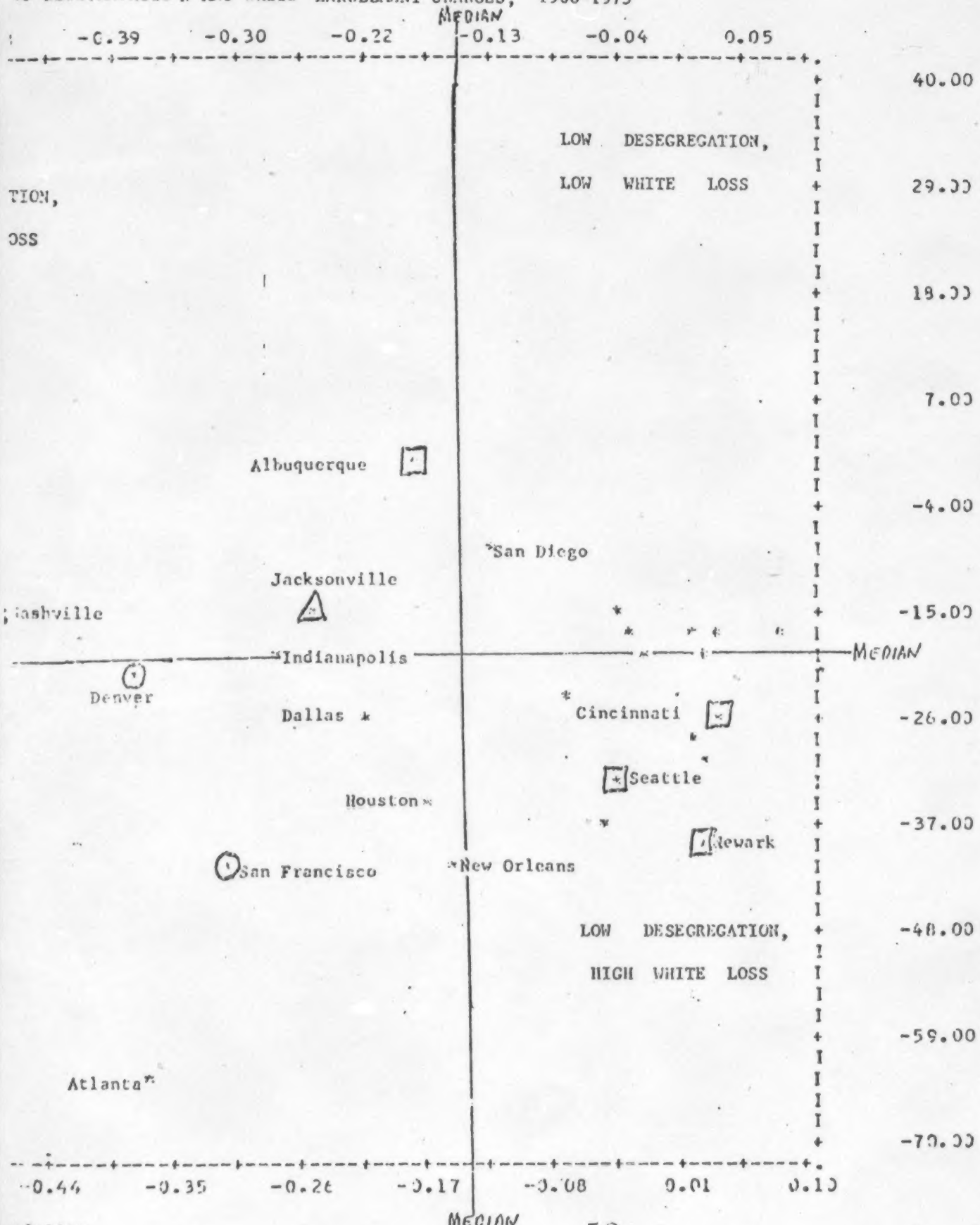
FOR VARIOUS SUB-SETS OF LARGE SCHOOL DISTRICTS

	First-Order Correlations			D. 3 Variable Multiple Correlation	Partial Correlations	
	A. Prop. of Blacks, 1968	B. Desegregation 1968-1973	C. Natural Log System Size, 1972		E. Prop. Black with Size & Desegregation Constant	F. Desegregation with Size & Prop. Black Held Constant
A. Original 19 Districts	-.583	+.247	.000	.605	-.565	+.198
B. Original Districts Plus Denver and San Francisco	-.490	+.193	+.056	.515	-.467	+.145
C. 27 Districts Whose Cities Rank in 50 Largest	-.486	+.256	+.162	.527	-.428	+.145
D. 21 Districts of B. Plus Miami, Jacksonville, Nashville, & Ft. Lauderdale	-.491	+.237	+.060	.517	-.451	+.132
E. Full 30 Districts	-.505	+.283	+.126	.550	-.455	+.175

Data Sources: Same as for Table 7.


SCATTER DIAGRAM OF DESEGREGATIO N AND WHITE
-0.75
-0.66
-0.57
-0.48
-0.39
-0.30
40.00
25.00
18.00
7.00
-4.00
-15.00
-26.00
-37.00
-48.00
-59.00
-70.00
Percentage Change in White Enrollment, 1968-1973
Ft. Lauderdale
HIGH DESEGREGATION,
LOW WHITE LOSS
Tampa
Miami
Charlotte
Nashville
Memphis
Denver
Albu
Ja
D
San F
HIGH DESEGREGATION,
HIGH WHITE LOSS
Atlanta
-0.80
-0.71
-0.62
-0.53
-0.44
-0.35
Changes in Coleman's Index of Segregation, 1968-1973

OF DESEGREGATION AND WHITE ENROLLMENT CHANGES, 1968-1973



68-1973

SCATTER DIAGRAM OF PROPORTION OF BLACK STUDE

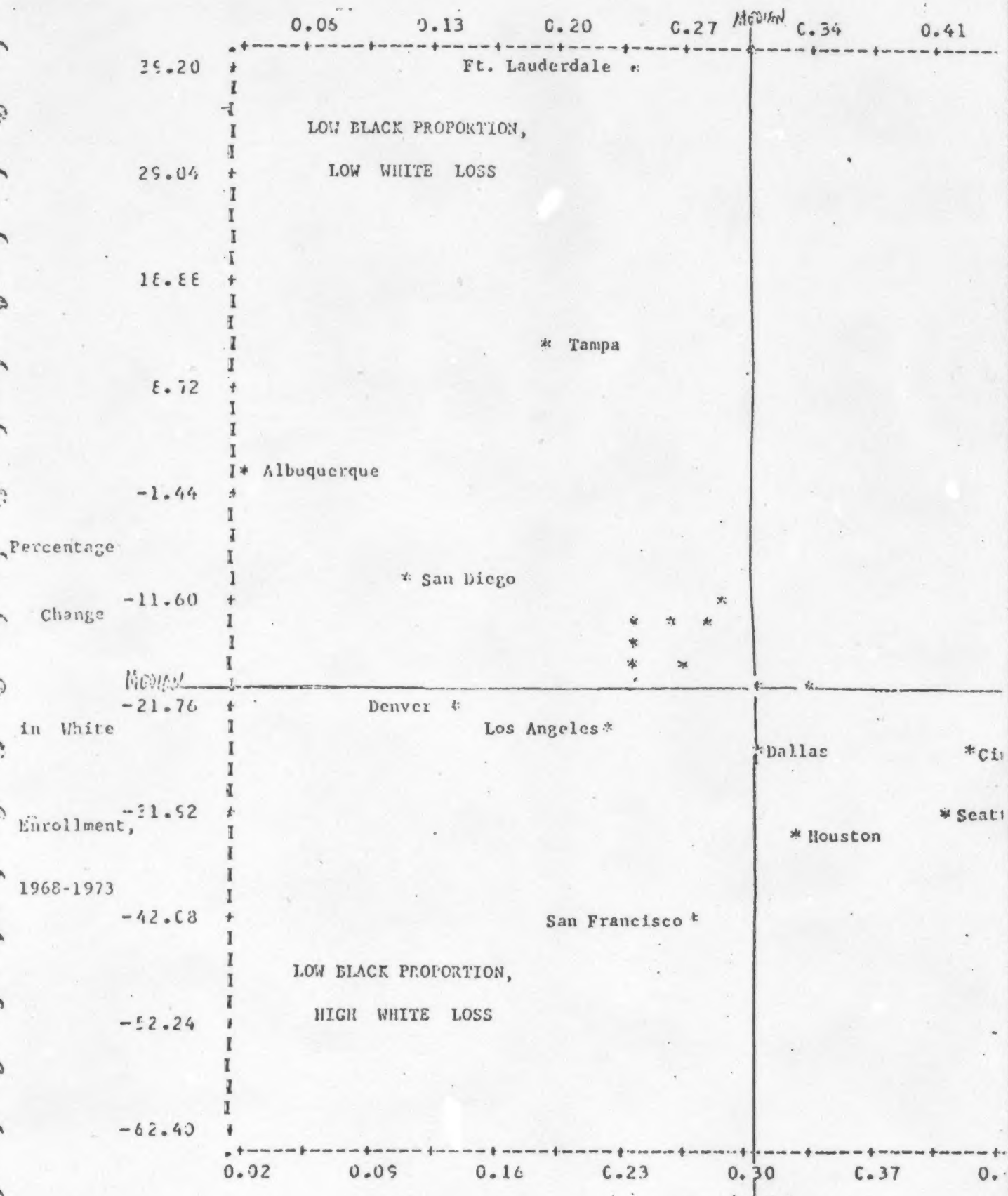


Figure 2

PORTION OF BLACK STUDENTS IN 1968 AND WHITE ENROLLMENT CHANGES, 1968-1973